



IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant: SOL AISENBERG ET AL

Serial No: 09/679,096

Filed: October 4, 2000

For: APPARATUS
FOR HAND DRYING

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) Group Art Unit:
) 3742
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) Examiner:
) Jeffery
)

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APPEAL BRIEF

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1. REAL PARTY IN INTEREST

The real party in interest in this Appeal is the Assignee, Excel Dryer Inc.

2. RELATED APPEALS AND INTERFERENCES

There are no related appeals or interferences known at this time to the Appellant, or
the Appellant's legal representatives which will directly affect, or be directly affected by, or
have a bearing upon the Board's decision in this appeal.

3. STATUS OF THE CLAIMS

Claims 36-43 are pending in the application.

Claims 41 and 43 have been allowed.

Claims 36-40 and 42 have been rejected twice. The outstanding Office Action rejects claims 36-40 as unpatentable under 35 U.S.C. § 103(a) over Gilbertson in view of Tomaro and Nosenchuck and rejects claim 42 as unpatentable under 35 U.S.C. § 103(a) over Gilbertson in view of Tomaro, Nosenchuck, Rose and Clemens.

The rejection of claims 36-40 and 42 is appealed.

4. STATUS OF AMENDMENTS

There have been no amendments after the Office Action of October 21, 2002. The claims on Appeal are attached hereto as an Appendix.

5. SUMMARY OF THE INVENTION

The following is a concise explanation of the invention. Reference to the specification and drawings is made pursuant to 37 CFR 1.192 and is not intended to limit the claims to the embodiments shown and described in the application.

The invention relates to a hand dryer having a blower 12, a heater 14 and an air outlet 16. The air flow rate and temperature of the air jet exiting air outlet 16 is such that drying of the hands occurs in two stages. An initial blow off stage removes droplets of water and breaks up a stagnation layer of water on the user's hand. The second stage includes evaporative drying where the warm air causes remaining water to evaporate. The air outlet may be angled towards the wall as shown in Appellant's Figure 1 to direct water from the hands away from the user.

Achieving the proper air jet is a complex task. An air jet having a small diameter will have high force, but will entrain ambient room air and result in a cool air jet. Conversely, an air jet having a large diameter will remain warm due to less entrainment but not have effective force. A myriad of factors come into play in designing the proper blower, heater and air outlet to achieve rapid drying. Use of one embodiment of the invention has resulted in drying times of 10-15 seconds.

A rapidly drying hand dryer has been needed in the industry for some time. Submitted with the response mailed August 30, 2002 is a Declaration under 37 CFR § 1.132 establishing a long felt need in the industry for a rapid drying hand dryer.

6. ISSUES

Whether claims 36-40 are patentable over Gilbertson in view of Tomaro and Nosenchuck.

Whether claim 42 is patentable over Gilbertson in view of Tomaro, Nosenchuck, Rose and Clemens.

7. GROUPING OF CLAIMS

Claim 36 stands or falls alone. Claim 37 stands or falls alone. Claims 38-40 stand or fall together. A discussion of why the claims do not stand or fall together is provided below.

8. ARGUMENT

Rejection of claims 36-40

Claim 36 recites an "air jet flow is no less than 18,000 linear feet per minute." The Examiner acknowledges that Gilbertson fails to teach this feature and relies on Tomaro for teaching a hair dryer having a motor speed of 19,000 rpm. Tomaro, however, fails to teach an airflow rate. The Examiner relies on Nosenchuck for teaching a variety of design choices that may be made in developing a hair dryer. The Examiner concludes that specific parameters affecting air flow rate are all design choices using well-know principles of aerodynamics and fluid mechanic and are therefore within the level of one of ordinary skill in the art. The Examiner also cites *In re Aller* for holding that it is not inventive to discover optimum or workable ranges by routine experimentation. Appellant respectfully disagrees

with this analysis for the following reasons.

First, the combination of Gilbertson, Tomaro and Nosenchuck fails to teach the claimed air jet flow of no less than 18,000 linear feet per minute. Nosenchuck references altering various design parameters, but does not specify the claimed air jet flow. It is well settled that for an obvious rejection to be proper, the references relied upon must teach all the claimed elements. See MPEP 2143.03 (To establish *prima facie* obviousness of a claimed invention, all the claim limitations must be taught or suggested by the prior art.). Clearly, in this case, the prior art relied upon by the Examiner fails to teach the claimed elements. Thus, the rejection should be reversed.

Additionally, the Examiner's reliance on "routine experimentation" is similar to the "design choice" rejection that has been criticized by the Court of Appeals for the Federal Circuit. In the case of *In re Chu*, 36 USPQ2d 1089 (Fed. Cir. 1995) citing *In re Gal*, 25 USPQ2d 1076 (Fed. Cir. 1992), the Federal Circuit reversed a Board of Appeals rejection based on design choice and held that a "finding of 'obvious design choice' precluded where the claimed structure and the function it performs are different from the prior art." In the present case, the air jet flow rate provides a hand dryer that provides rapid drying of the hands by blowing off loose water and disrupting a stagnation boundary layer. These functions are not provided in Gilbertson, Tomaro or Nosenchuck. Thus, the Examiner's reliance on the "routine experimentation" is misplaced in the present case.

With respect to reliance on *Aller*, it is noted that this case is directed to a chemical process invention where ranges are changed and results may be expected or unexpected based on known chemical principals. The court in *Aller* noted that changes in kind rather than degree are patentable. In the present case, the inventors have obtained a change in the

“kind” of drying, rather than just the degree of drying. The use of a blow-off stage and evaporation stage is unique.

Additionally, there is no motivation to utilize an air jet flow no less than 18,000 linear feet per minute in Gilbertson. Gilbertson teaches a dryer for use in dentistry to dry teeth. Clearly, the force of the air stream in Gilbertson should not be such that would cause discomfort to the patient. It is submitted that an air jet of 18,000 linear feet per minute would not be suitable for drying teeth as such a forceful jet may cause patient discomfort. Thus, there is no motivation to use such air jet velocities in Gilbertson.

Lastly, in the response filed August 30, 2002, Appellant submitted a Declaration under 37 C.F.R. § 1.132 establishing that the hand drying industry has experienced a long felt need for a dryer that rapidly dries the hands. Such rapid drying is accomplished, as disclosed in Appellant's specification, by using an air stream having a high velocity to remove loose water and break up the stagnation boundary layer. This secondary indicia of non-obviousness weighs against a finding that claim 36 is unpatentable.

For the above reasons, claim 36 is patentable over Gilbertson in view of Tomaro and Nosenchuck.

Claim 37 stands or falls alone from claim 36 because claim 37 recites parameters not found in claim 36 and is independently patentable. Claim 37 recites where “said air outlet has a cross sectional dimension between 0.5 inches to 1.25 inches, and where said air outlet has a length 3 to 5 times as large as said air outlet cross sectional dimension.” These features are not in claim 36.

The combination of Gilbertson, Tomaro and Nosenchuck fails to teach these claimed dimensional relationships. It is well settled that for an obvious rejection to be proper, the references relied upon must teach all the claimed elements. See MPEP 2143.03 (To establish

prima facie obviousness of a claimed invention, all the claim limitations must be taught or suggested by the prior art.). Clearly, in this case, the prior art relied upon by the Examiner fails to teach the claimed elements. Thus, the rejection should be reversed.

Additionally, the Examiner's reliance on "routine experimentation" is similar to the "design choice" rejection that has been criticized by the Court of Appeals for the Federal Circuit. In the case of *In re Chu*, 36 USPQ2d 1089 (Fed. Cir. 1995) citing *In re Gal*, 25 USPQ2d 1076 (Fed. Cir. 1992), the Federal Circuit reversed a Board of Appeals rejection based on design choice and held that a "finding of 'obvious design choice' precluded where the claimed structure and the function it performs are different from the prior art." In the present case, the air jet flow rate provides a hand dryer that provides rapid drying of the hands by blowing off loose water and disrupting a stagnation boundary layer. These functions are not provided in Gilbertson, Tomaro or Nosenchuck. Thus, the Examiner's reliance on the "routine experimentation" is misplaced in the present case.

With respect to reliance on *Aller*, it is noted that this case is directed to a chemical process invention where ranges are changed and results may be expected or unexpected based on known chemical principals. The court in *Aller* noted that changes in kind rather than degree are patentable. In the present case, the inventors have obtained a change in the "kind" of drying, rather than just the degree of drying.

Lastly, in the response filed August 30, 2002, Appellant submitted a Declaration under 37 C.F.R. § 1.132 establishing that the hand drying industry has experienced a long felt need for a dryer that rapidly dries the hands. Such rapid drying is accomplished, as disclosed in Appellant's specification, by using an air stream provided through an outlet having a specific size and length. These dimensions limit entrainment of ambient air and allow the air

jet to remain warm upon reaching the user's hands. This secondary indicia of non-obviousness weighs against a finding that claim 37 is unpatentable.

Claims 38-40 stand or fall together, separate from claims 36 and 37, because claims 38-40 recite parameters not found in claims 36 and 37 that are independently patentable. With respect to claims 38-40, these claims all recite:

where said air outlet has a cross sectional dimension between 0.5 inches to 1.25 inches, and where said air outlet has a length 3 to 5 times as large as said air outlet cross sectional dimension, and where said air jet flow is no less than 18,000 linear feet per minute, and where said air jet at said air outlet has a pressure force of about 25 inches of water pressure height at said outlet, and where said air jet is heated, and is at a temperature of approximately 130 deg. F at 4 inches from said air outlet.

The combination of Gilbertson, Tomaro and Nosenchuck fails to teach the claimed elements. It is well settled that for an obvious rejection to be proper, the references relied upon must teach all the claimed elements. See MPEP 2143.03 (To establish *prima facie* obviousness of a claimed invention, all the claim limitations must be taught or suggested by the prior art.). Clearly, in this case, the prior art relied upon by the Examiner fails to teach the claimed elements. Thus, the rejection should be reversed.

Additionally, the Examiner's reliance on "routine experimentation" is similar to the "design choice" rejection that has been criticized by the Court of Appeals for the Federal Circuit. In the case of *In re Chu*, 36 USPQ2d 1089 (Fed. Cir. 1995) citing *In re Gal*, 25 USPQ2d 1076 (Fed. Cir. 1992), the Federal Circuit reversed a Board of Appeals rejection based on design choice and held that a "finding of 'obvious design choice' precluded where the claimed structure and the function it performs are different from the prior art." In the present case, the design parameters provide for rapid drying of the hands by both (i) removing loose water and disrupting the stagnation boundary layer and (ii) and providing

sufficient heat for evaporative drying. These functions are not provided in Gilbertson, Tomaro or Nosenchuck. Thus, the Examiner's reliance on the "routine experimentation" is misplaced in the present case.

With respect to reliance on *Aller*, it is noted that this case is directed to a chemical process invention where ranges are changed and results may be expected or unexpected based on known chemical principals. The court in *Aller* noted that changes in kind rather than degree are patentable. In the present case, the inventors have obtained a change in the "kind" of drying, rather than just the degree of drying.

Lastly, in the response filed August 30, 2002, Appellant submitted a Declaration under 37 C.F.R. § 1.132 establishing that the hand drying industry has experienced a long felt need for a dryer that rapidly dries the hands. Such rapid drying is accomplished, as disclosed in Appellant's specification, by using specific design parameters, such as those recited in claims 38-40, to provide rapid drying of the hands. This secondary indicia of non-obviousness weighs against a finding that claims 38-40 are unpatentable.

Rejection of claim 42

With respect to claim 42, this claim recites elements similar to those discussed above with reference to claims 38-40. Thus, claim 42 is patentable for at least the reasons advanced with respect to claims 38-40. Additionally, claim 42 recites "where said dryer is mounted on the wall, and said air jet is angled towards the wall so that said water blown off is blown away from the user." Gilbertson, Tomaro and Nosenchuck are directed to hand held dryers. Thus it is not clear how these dryers can be considered mounted on a wall or having an air jet angled towards the wall. Rose and Clemens disclose wall mounted dryers, but neither discloses angling the air jet towards the wall. Clemens discloses directing the air jet

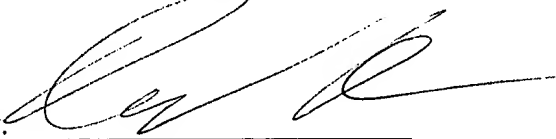
substantially vertically downward, not towards the wall. Thus, the combination of Gilbertson, Tomaro, Nosenchuck, Rose and Clemens fails to teach the claimed elements.

Appellant respectfully requests that the rejection of claims 36-40 and 42 be reversed.

If there are any additional charges with respect to this appeal, or otherwise, please charge them to Deposit Account No. 06-1130 maintained by Appellant's attorneys.

Respectfully submitted,

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Date: December 3, 2002

APPENDIX

36. An apparatus for drying hands, comprising:

a blower for generating an air jet,

where the blower is driven by an electric motor, and

a heater for increasing temperature of said air jet, and

an air outlet for outputting said air jet, where said air jet flow is no less than 18,000 linear feet per minute.

37. An apparatus for drying hands, comprising:

a blower for generating an air jet,

where the blower is driven by an electric motor, and

a heater for increasing temperature of said air jet, and

an air outlet having a longitudinal axis, the air outlet outputting said air jet, and

where said air outlet is tubular with an open end for said air jet to exit along the longitudinal axis, and

where said air outlet has a cross sectional dimension between 0.5 inches to 1.25 inches, and

where said air outlet has a length 3 to 5 times as large as said air outlet cross sectional dimension.

38. An apparatus for drying hands, comprising:

a blower for generating an air jet,

where the blower is driven by an electric motor, and

a heater for increasing the temperature of said air jet, and

an air outlet having a longitudinal axis, the air outlet outputting said air jet, and

where said air outlet is tubular with an open end for said air jet to exit

along the longitudinal axis, and

where said air outlet has a cross sectional dimension between 0.5 inches to 1.25 inches, and

where said air outlet has a length 3 to 5 times as large as said air outlet cross sectional dimension, and

where said air jet flow is no less than 18,000 linear feet per minute, and

where said air jet at said air outlet has a pressure force of about 25 inches of water pressure height at said outlet, and

where said air jet is heated, and is at a temperature of approximately 130 deg. F at 4 inches from said air outlet.

39. An apparatus for drying hands, comprising:

a blower for generating an air jet,

where the blower is driven by an electric motor, and

a heater for increasing temperature of said air jet, and

an air outlet having a longitudinal axis, the air outlet outputting said air jet, and

where said air outlet is tubular with an open end for said air jet to exit along the longitudinal axis, and

where said air outlet has a cross sectional dimension between 0.5 inches to 1.25 inches, and

where said air outlet has a length 3 to 5 times as large as said air outlet cross sectional dimension, and

where said air jet flow is no less than 18,000 linear feet per minute, and

where said air jet at said air outlet has a pressure force of about 25 inches of water pressure height at said outlet, and

where said air jet is heated, and is at a temperature of approximately 130 deg. F at 4 inches from said air outlet, and

whereby said air jet blows off a portion of the water from said hands in less than 3 seconds, and

whereby said air jet breaks up a stagnation boundary layer on said hands and aids in evaporation of remaining water.

40. An apparatus for drying hands, comprising:

a blower for generating an air jet,

where the blower is driven by an electric motor, and

where said motor is a brush type motor with a thermistor resistor in series with the brushes to limit the starting current in order to extend said brush life, and

a heater for increasing temperature of said air jet, and

an air outlet having a longitudinal axis, the air outlet outputting said air jet, and,

where said outlet is tubular with an open end for said air jet to exit along the longitudinal axis, and

where said air outlet has a cross sectional dimension between 0.5 inches to 1.25 inches, and

where said air outlet has a length 3 to 5 times as large as said air outlet cross sectional dimension, and

where said air jet flow is no less than 18,000 linear feet per minute, and

where said air jet at said air outlet has a pressure force of about 25 inches of water pressure height at said outlet, and

where said air jet is heated, and is at a temperature of approximately 130 deg. F at 4 inches from said air outlet, and

whereby said air jet blows off a portion of the water from said hands in less than 3 seconds, and

whereby said air jet breaks up a stagnation boundary layer on said hands and aids in evaporation of remaining water.

42. An apparatus for drying hands, comprising:

a blower for generating an air jet,

where the blower is driven by an electric motor, and

a heater for increasing temperature of said air jet, and

an air outlet having a longitudinal axis, the air outlet outputting said air jet, and,

where said outlet is tubular with an open end for said air jet to exit along the longitudinal axis, and

where said air outlet has a cross sectional dimension between 0.5 inches to 1.25 inches, and

where said air outlet has a length 3 to 5 times as large as said air outlet cross sectional dimension, and

where said air jet flow is no less than 18,000 linear feet per minute, and

where said air jet at said air outlet has a pressure force of about 25 inches of water pressure height at said outlet, and

where said air jet is heated, and is at a temperature of approximately 130 deg. F at 4 inches from said air outlet, and

where said dryer is mounted on the wall, and said air jet is angled towards the wall so that said water blown off is blown away from the user, and

whereby said air jet blows off a portion of the water from said hands in less than 3 seconds, and

whereby said air jet breaks up a stagnation boundary layer on said hands and aids in evaporation of remaining water.